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ABSTRACT

This autoinstructional lesson can be used with health education and/or biology classes in a high school curriculum. It deals with the study of human development with emphasis on the female reproductive organs and cycles. The behavioral objectives are given, and the materials and equipment needed to gain these objectives are itemized. Fifteen minutes of time is considered enough time to have the students complete the lesson. The script is included in the packet as well as a vocabulary sheet and a work sheet for the student. A bibliography is given. (EB)

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FEMALE REPRODUCTIVE SYSTEM

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TEACHER'S GUIDE

PACKET NUMBER	612.62 H
SUBJECT	Health
TITLE	Female Reproductive System
LEVEL	High School
PREREQUISITES	None
BEHAVIORAL OBJECTIVES	1. Identify the parts of the female reproductive system. 2. Describe the function of each part of the female reproductive system. 3. Explain the menstrual cycle and its relationship to reproduction.
EQUIPMENT	Thirteen slides Slide projector Tape recorder Cassette tape Vocabulary sheet Model of female reproductive system Paper
TIME	15 minutes
SAMPLE EVALUATION	Work sheet
SPACE REQUIRED	Carrel
BIBLIOGRAPHY	Broderick, C., and Bernard J. The Individual Sex, and Society. Johns Hopkins Press, Baltimore, Md. 1969. Slides - Human Reproduction 100, Guidance Associates/Harcourt, Brace and World

STUDENT GUIDE

HEALTH
FEMALE REPRODUCTIVE SYSTEM

Objectives

1. Using the chart provided, the student will locate the parts of the reproductive system and recognize the functions of each.

2. The student will trace the path of an ovum and describe the menstrual cycle.

General Directions

Carefully observe the order of the slides so that the audio and visual portion of the presentation are together. Do not start the slides until told to do so. Music will be heard each time a slide is to be changed.

After you have completed the A-T, please rewind the tape and leave everything exactly as you found it.

STUDENT VOCABULARY SHEET

HEALTH
FEMALE REPRODUCTIVE SYSTEM

1.	Puberty	The stage of life at which the reproductive organs begin to function and the secondary sex characteristics become visible.
2.	Ovary	Female sex gland; one of a pair of organs that produce eggs or ova.
3.	Fallopian tubes	Tubes which transport the ovum to the uterus.
4.	Uterus (womb)	A pear shaped, muscular organ ordinarily measuring 3 inches long, 2 inches wide and 1 inch thick. It expands greatly during pregnancy.
5.	Vagina	The flexible canal in the female in which the penis is inserted during intercourse. Also serves as the opening for menstrual flow to leave the body and as a birth canal.
6.	Urethra	Canal through which the urine is discharged, about 1 1/2' long in the female.
7.	Estrogens	Family of hormones which promote the maturation and functions of the female reproductive tract and the development of secondary sex characteristics.
8.	Cervix	Lower portion of the uterus which protrudes into the upper portion of the vagina.
9.	Rectum	The lower part of the large intestine.
10.	Anus	The opening from the rectum through which waste matter is removed from the body.
11.	Labia	Outer lips of the female genitalia.
12.	Ovulation	Maturation and escape of the ovum from the follicle

STUDENT VOCABULARY SHEET

HEALTH
FEMALE REPRODUCTIVE SYSTEM

13.	Ovum (plural - ova)	Female germ cell containing a nucleus.
14.	Menstruation	Periodic discharge of bloody fluid from the uterus.
15.	Menopause	The cessation (stopping) of menstrual periods. Usually occurs between ages 40 - 55.

SCRIPT INTRODUCTION

HEALTH
FEMALE REPRODUCTIVE SYSTEM

During this program, you will see slides and hear a discussion on the female reproductive system. At the completion of the presentation you should be able to locate the various parts of the reproductive system and recognize the functions of each.

At the end of the discussion you will be given a brief self-test to see how much you have learned.

Please do not begin the slides until you are told to do so.

SCRIPT

HEALTH
FEMALE REPRODUCTIVE SYSTEM

From birth until about 8 or 9 years of age, nothing very impressive happens in a child's sexual development. At about 8 years, a gradual buildup of testosterone and the estrogens begins in both boys and girls, although testosterone predominates in the male and the estrogens in the female. By about 10 or 11 the level begins to increase dramatically, especially in the female. At the same time the pituitary, or master gland, located at the base of the brain, sends out substantial amounts of hormone to stimulate the further development of eggs in the female. Sometime between the ages of 10 and 14, the girl first begins to notice pubic hair developing. Within a month or so her breasts begin to form, and within the year she will probably have her first menstrual period. Meanwhile, she is growing in height and her hips are broadening.

The exact onset of these changes varies from individual to individual and also from culture to culture. At whatever age it occurs, puberty completes the process of maturation by which men and women become physically able to play their respective parts in the process of reproduction.

I will now give a brief description of the four major organs of the female productive system. Please turn to each slide when the music is heard.

SCRIPT

HEALTH
FEMALE REPRODUCTIVE SYSTEM

MUSIC - SLIDE ONE. Within the abdomen on either side of the uterus and attached loosely to it by connective tissues, lie two walnut-sized bodies, the ovaries. They get their name from their chief function, which is to produce eggs. Ova is the Latin word for eggs, and ovary thus means "place of eggs". In addition to being the place where eggs are kept, the ovary is the primary producer of the two female hormones, estrogen and progesterone.

Close to the ovaries are the open, many fingered ends of the Fallopian tubes. These tubes together are four or five inches long and about the thickness of a pencil, only quite flexible. They serve as the passageway for the egg traveling toward the uterus and for sperm traveling up from the uterus to meet it.

The uterus is a pear shaped muscular organ located in about the center of the lower abdomen. It is the place where the baby develops before its birth. Ordinarily it can contain only a few teaspoonsful of fluid, but it is capable of stretching to 500 times its normal size during pregnancy. At its lower end there is a narrow exit that projects into the vagina called the cervix. During childbirth, the cervix dialates large enough to permit the baby to pass through.

The lining of the uterus is a unique tissue. This lining is the

SCRIPT

HEALTH
FEMALE REPRODUCTIVE SYSTEM

soil in which the fertilized egg plants itself. If no egg is planted, this lining sluffs off and leaves the body as the menstrual flow.

The vagina is a flexible canal which is roughly 4 inches long. It is the opening through which the menstrual flow leaves the body.

The vagina also functions as the canal in which the penis is inserted during intercourse and it is also the birth canal.

MUSIC - SLIDE TWO. In this side view of the female reproductive system, the organs are shown with their relationship to the urinary bladder. Urine is stored in the bladder and leaves the body through a canal called the urethra. Notice how the uterus naturally tilts forward. The labia are the outer lips of the female genitalia.

MUSIC - SLIDE THREE. This side view diagram shows the rectum where solid waste matter is stored and the anus, the opening through which solid waste is removed from the body. Note that the female has three openings in the genital area. Can you recall the names of these openings and the functions of each?

MUSIC - SLIDE FOUR. Here you can see an egg within the ovary, ripening to maturity and getting ready to escape into the fallopian tube.

SCRIPT

HEALTH
FEMALE REPRODUCTIVE SYSTEM

MUSIC - SLIDE FIVE. A special chemical weakens the wall of the ovary and the egg is released. This release is called ovulation and alternates from one ovary to the other each month.

MUSIC - SLIDE SIX. The egg is entrapped almost immediately by the finger-like flared end of the nearest fallopian tube. For the next 24 hours, the egg is slowly moved along the tube in a kind of swallowing motion, with the help of tiny hair-like structures. If it does not meet a sperm within the first day, it will die, having progressed less than halfway down the tube in its journey toward the uterus. It may take as long as 4 days to travel down the fallopian tube. The fact that an egg lives only one day after ovulation and that ovulation occurs only once a month enables one to realize the importance of that day in family planning.

Ovulation takes place about 14 days before the next menstrual period begins. Whenever it occurs, ovulation instigates a whole series of important reactions other than the release of the egg itself.

MUSIC - SLIDE SEVEN. Under the influence of the hormone estrogen, the walls of the uterus being to thicken. It now gives off a fluid containing food substances into the uterus. If the egg

gets fertilized by a sperm during its short day of life, this food will nourish the developing new embryo until it can attach itself firmly into the lining of the uterus.

MUSIC - SLIDE EIGHT. If the egg is not fertilized by sperm on its journey through the tube, it will deteriorate upon reaching the uterus. Ten-fourteen days later, the lining of the uterus will begin to break down. The materials that made up the lining are shed from the body. This loss of tissue, blood and fluid is called menstruation.

MUSIC - SLIDE NINE. The menstrual flow will last approximately 5 days. The first day that menstruation begins is day one of the next cycle. This is a normal part of life for all fertile women, however, some women may experience discomfort or cramps at this time of the month. The average total menstrual flow amounts to about 6 teaspoons of blood.

MUSIC - SLIDE 10. From the 6th day, after the onset of menstruation, to the 13th day, the uterine lining begins to repair itself.

MUSIC - SLIDE 11. On the 14th day of the cycle, ovulation will again occur. Sexual intercourse at this time will likely result in pregnancy.

SCRIPT

HEALTH
FEMALE REPRODUCTIVE SYSTEM

MUSIC - SLIDE 12. For the next ten days the uterine lining builds up its rich supply of blood.

MUSIC - SLIDE 13. If the egg is not fertilized by male sperm, the lining will break down and menstruation will again occur. During a female's reproductive lifetime, from approximately 13 years of age to 45 years of age, this entire process will occur about 400 times. Normally the only time ovulation and menstruation will not occur is during pregnancy.

Sometime between the age of 40 and 55 most women observe that the ovulation-menstruation cycle begins to run down. Generally it is the ovaries that cease to function first. They simply become unable to respond to the doses of hormone sent out by the pituitary gland. These high levels of hormone cause a periodic dilation of the blood vessels and cause the "hot flashes" which women sometimes experience during this period. It generally takes from 105 years for the body fully to adjust to this change. During this period it is not uncommon for an occasional egg to be released into the fallopian tubes, and many a child has come into the world at least partly because his mother assumed she was infertile.

There has been a lot said lately about the birth control pill,

SCRIPT

HEALTH
FEMALE REPRODUCTIVE SYSTEM

but a lot of people do not know how it works. The reason it works is fairly simple. Remember the hormones that were mentioned earlier? They act as a chemical signal to the body. The pill also contains hormones that act as chemical signals. These signals trick the body into thinking that it is already pregnant and therefore, the normal cycle of producing the egg does not occur. Since the egg is not produced, the woman cannot become pregnant. MUSIC.

You may now turn off the slide projector. If you would like to check to see what you have learned, turn off the tape recorder and review the vocabulary words. Turn it back on to receive instructions for the self-test.

I will ask you ten questions on the material you have just reviewed. Use the model that has been provided. Note that each part of the female reproductive system is numbered. Answer these questions by writing the number on the paper provided.

1. Locate the fallopian tubes.
2. Locate the muscular canal used for sexual intercourse, menstruation, and childbirth.
3. Locate the organ where urine is stored.

SCRIPT

HEALTH
FEMALE REPRODUCTIVE SYSTEM

4. Locate the rectum.

5. Locate the ovum.

6. Locate the canal through which urine leaves the body.

7. Locate the opening used for removal of solid waste material.

8. Locate the cervix.

9. Locate the ovary

10. Locate the nucleus of the ovum.

Now that you have taken the test, I will give you the correct answers.

Number 1 - 2

Number 2 - 9

Number 3 - 21

Number 4 - 25

Number 5 - 20

Number 6 - 22

Number 7 - 26

Number 8 - 6

Number 9 - 17

Number 10 - 1

SCRIPT

HEALTH
FEMALE REPRODUCTIVE SYSTEM

Please rewind the tape and leave the carrel as you found it. You may take your test paper with you. Make certain that the slides are in proper order.